Davis-Monthan Air Force Base

Boundaries:

Davis-Monthan Air Force Base (DMAFB) is located in eastern Tucson. The northern boundary gradually descends to the south from Golf Links Road to Irvington Road. The eastern boundary is Harrison Road, and Alvernon Way is the western boundary. The southern-most boundary is Valencia Road on the east side of the site area.

Site History:

- DMAFB is a 10,700-acre, training base for tactical aircraft crews as well as being the primary storage facility for obsolete or excess aircraft. DMAFB has been operational at this site since 1925.

- The Installation Restoration Program was initiated in 1982. Studies had identified 52 potential areas of concern. Many of these sites had no confirmed contamination and most of the sites identified for remediation have been cleaned up.

- The J3 Pumphouse or site 35 (ST-35) is the main jet fuel pumphouse and is located near the center of the flight line. A soil investigation in 1989, which included 22 soil borings indicated subsurface soils were contaminated with the jet petroleum grade (JP-4 jet fuel) to depths of 230 feet. Soil contaminants include petroleum hydrocarbons and benzene, toluene, ethyl benzene and xylene (BTEX). Benzene most likely came through a well conduit from the drilling of the monitoring wells and was detected on the top of the groundwater table. Groundwater remediation of the jet fuel occurred briefly in 1994 and was turned off after the water was determined to be clean and free of contamination. The groundwater level is at a depth of approximately 340 feet and is below a naturally-occurring protective clay layer. A soil vapor extraction (SVE) system was constructed following a 1994 study. This system continues to remove the BTEX and petroleum hydrocarbon constituents in the soil.

- Since September 1995, the soil vapor extraction (SVE) system has been removing petroleum hydrocarbons from the soil. The SVE system continues to operate at the site.

- While installing a downgradient monitoring well at the J3 Pumphouse (ST-35) in April 2003, free product was encountered at a depth of 245 feet. Drilling of the well was stopped and a jet fuel investigation commenced. Analysis of the free product revealed the presence of JP-8, which was used at the base starting in the early to mid 90's. Over a dozen soil borings were drilled and sampled. It was determined that the product was coming from a previously unknown release.

- Due to concern about jet fuel penetrating the clay layer above the water table three new groundwater monitoring wells were installed farther away from the J3 Pumphouse in the downgradient direction northwest of the site in 2004.

- The Main Base Landfill (LF-01) is a closed landfill located about 2000 feet west of the main runway and occupies approximately 35 acres. The landfill was used from the early 1940s until 1976 for the disposal of household debris, metals, car and aircraft components, solvents, pesticides and other items. Soil and groundwater samples were taken starting in 1983 to 1994 and tested for volatile organic compounds (VOCs), metals, pesticides, PCBs, petroleum hydrocarbons, and other compounds. Analytical results were below regulatory standards. A landfill cover was designed and installed in 1999. A landfill gas collection, control, and treatment system was installed and is in operation.

- The aluminum dross contamination from past smelting operations on and near the base has been treated by solidification/stabilization and transported to an off-site landfill.

- The former Titan Missile Silo Site #12 (AOC 8) is an off-base property that is currently being transferred to the Bureau of Land Management (BLM). The missile site was deactivated and dismantled in 1986 when the missiles and all fuels were removed, and the top 25 feet of the silo was imploded, backfilled and returned to native desert terrain. Eleven soil samples were collected on December 2, 2003 and were all non detect for VOC's and any suspected contaminants.

- An automotive gasoline leak was discovered in 1985 at site ST-36. Benzene was reported above the Arizona residential soil remediation levels (SRL's) in 1999 at 43 mg/kg at a depth of 60 feet and in 2004 at 23 mg/kg at 50 feet below ground surface. Natural attenuation continues to reduce benzene levels and five-year reviews are being conducted. A five-year review was completed in 2005 for the automotive gasoline leak at site ST-36.

- A five-year review was completed in July 2005 at the low level radiation hazardous waste site RW-16. A cement vault is buried, fenced and monitored annually. No deficiencies were identified during the five-year review and the remedy is to be continued.

- An investigation and removal action was completed at the recycling yard Areas of Concern (AOCs) 50 & 51. Geophysics, trenching and sampling were followed by limited soil and debris removal at the buried disposal area. No contaminants of concern above regulatory levels in soils were left in place and a closure letter was sent by ADEQ in July 2005.

Site Status:

- The jet fuel contamination in the subsurface soil at ST-35 (J3 Pumphouse) has been characterized both laterally and vertically. Several of the soil borings have been converted to vapor extraction wells. Investigations into the source of the JP-8 are ongoing. The SVE system has removed over 206,000 gallons of petroleum hydrocarbons from the soil and continues to operate. Groundwater monitoring wells at the site are sampled quarterly and continue to be non-detect for contaminants of concern.

- A SVE system has been installed to remediate petroleum hydrocarbons in shallow soils at the former Army & Air Force Exchange Service (AAFES) gas station (ST-52).

- The Main Base Landfill (LF-01) will continue maintenance of the cover vegetation and cap. A landfill gas collection, control, and treatment system operates about 20 hours per week to maintain minimum levels of methane beneath the control tower.

- The last Restoration Advisory Board (RAB) meeting was held on October 12, 2005. The next RAB meeting is scheduled for April 2006.

Site Hydrogeology:

- DMAFB is located within the Tucson Basin, a northwest trending alluvial valley. The Santa Cruz River flows northwesterly and provides the main drainage for the Tucson Basin and is located approximately 4.6 miles west of the Base.

- Groundwater occurs within the unconsolidated alluvial deposits consisting of interfingering sand, gravel, silt, and clay. The saturated thickness of these sediments is extremely variable, being thin (less than 200 feet) toward the mountains and thickening (greater than 5,000 feet) toward the center of the basin. These deposits were distributed laterally by a constantly changing stream course.

- In the vicinity of the Davis-Monthan AFB, the Pantano formation, Tinaja Beds, and Fort Lowell Formation are the primary sources of water. The Base is located in the Sonora Desert in an arid climate with a low precipitation rate of 12 inches per year and a high evaporation rate of 65 inches per year. Groundwater is the primary source of water in the Tucson area, though CAP water is being used more often. Groundwater is encountered at approximately 350 feet bgs. The groundwater table dropped 15 feet in three years from 1998 to 2001 and continues to drop at about one to two feet a year across the base. Groundwater generally flows in the northwest direction.

Contaminants:

The contaminants of concern at the jet fuel J3 Pumphouse, site ST-35 include petroleum hydrocarbons and benzene, toluene, ethyl benzene and xylene (BTEX) in soils. Contaminants of concern at the landfill (LF-01) include methane gas, volatile organic compounds (VOCs), and metals in soil. No contamination of the groundwater has been encountered. Contaminants of concern at the site may change as new data become available.

Public Health Impact:

A long term groundwater monitoring program is in place and wells are monitored quarterly. Contamination is limited to the subsurface soil. Groundwater has not been impacted at either of these sites. There is no known risk to human health from the site.

Community Involvement Activities:

A Restoration Advisory Board (RAB) was formed in 1994 and meets annually. The last meetings were held at DMAFB on October 13, 2004 and April 19, 2005.

Information Repositories:

Interested parties can review site information at the ADEQ main office located at 1110 West Washington, Phoenix. With 24 hour notice, an appointment to review relating documentation is available Monday through Friday from 8:30 a.m. to 4:30 p.m., at the ADEQ Records Management Center, 1110 W. Washington Street in Phoenix, Arizona. Please contact (602) 771-4380 or (800) 234-5677 to schedule an appointment to review these documents.

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* In Arizona, but outside the Phoenix area, call toll-free at (800) 234-5677.